No. 200100160

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

South Dakota Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN [illegible]DUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY [illegible]CTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A [illegible]ERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE [illegible]84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'SD1091RR'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this twelfth day of September, in the year two thousand one.*

Attest:

Paul M. Zawbowl

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

[illegible]

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
SD92-1233G

3. VARIETY NAME
SD1091RR

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
SOUTH DAKOTA STATE UNIVERSITY
AGRICULTURAL HALL 129
BROOKINGS, SD 57007

5. TELEPHONE *(include area code)*
(605) 688-4149

6. FAX *(include area code)*
605 688 6065

FOR OFFICIAL USE ONLY

PVPO NUMBER 200100160

FILING DATE
4/2/2001

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
SD AGRIC EXPERIMENT STATION

8. IF INCORPORATED, GIVE STATE OF INCORPORATION

9. DATE OF INCORPORATION

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
DR. KEVIN KEPHART, DIRECTOR
SD AGRICULTURAL EXPERIMENT STATION
AG HALL 129, BOX 2207
SOUTH DAKOTA STATE UNIVERSITY
BROOKINGS, SD 57007-2141

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 2,705.00
DATE 4/02/2001

CERTIFICATION FEE:
$ 320 SD
DATE 8/16/01

11. TELEPHONE *(Include area code)*
(605) 688-4149

12. FAX *(Include area code)*
605 688 6065

13. E-MAIL
Kevin_Kephart@sdstate.edu

14. CROP KIND *(Common Name)*
soybean

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

- a. [X] Exhibit A. Origin and Breeding History of the Variety
- b. [X] Exhibit B. Statement of Distinctness
- c. [X] Exhibit C. Objective Description of Variety
- d. [ ] Exhibit D. Additional Description of the Variety *(Optional)*
- e. [X] Exhibit E. Statement of the Basis of the Owner's Ownership
- f. [X] Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
- g. [X] Filing and Examination Fee ($2,705), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*
[X] YES *(If "yes", answer items 20 and 21 below)* [ ] NO *(If "no," go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES? [ ] YES [X] NO
IF YES, WHICH CLASSES? [ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

21. DOES THE OWNER SPECIFY THAT THE CLASSES BE LIMITED AS TO NUMBER OF GENERATIONS? [ ] YES [X] NO
IF YES, SPECIFY THE NUMBER 1, 2, 3, *etc.* [ ] FOUNDATION [ ] REGISTERED [ ] CERTIFIED

(If additional explanation is necessary, please use the space indicated on the reverse.)

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
[X] YES [ ] NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
[X] YES [ ] NO
IF YES, GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER	SIGNATURE OF OWNER
NAME *(Please print or type)* Kevin D. Kephart	NAME *(Please print or type)*
CAPACITY OR TITLE Director, SD Agric Experiment Station	DATE 3-23-2001
CAPACITY OR TITLE	DATE

S&T-470 (2-99) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (6-98) which is obsolete. *(See reverse for instructions and information collection burden statement)*

INSTRUCTIONS

200100160

GENERAL: To be effectively filed with the Plant Variety Protection Office (PVPO), **ALL** of the following items must be **received** in the PVPO: (1) Completed application form signed by the owner; (2) completed exhibits A, B, C, E; (3) for a seed reproduced variety at least 2,500 viable untreated seeds, for a hybrid variety at least 2,500 untreated seeds of each line necessary to **reproduce** the variety, or for tuber reproduced varieties verification that a viable *(in the sense that it will reproduce an entire plant)* tissue culture will be deposited and maintained in an approved public repository; (4) check drawn on a U.S. bank for $2,705 ($320 filing fee and $2,385 examination fee), payable to "Treasurer of the United States" *(See Section 97.6 of the Regulations and Rules of Practice.)* Partial applications will be held in the PVPO for not more than 90 days, then returned to the applicant as unfiled. Mail application and other requirements to Plant Variety Protection Office, AMS, USDA, Room 500, NAL Building, 10301 Baltimore Avenue, Beltsville, MD 20705-2351. Retain one copy for your files. All items on the face of the application are self explanatory unless noted below. Corrections on the application form and exhibits must be initialed and dated. **DO NOT** use masking materials to make corrections. If a certificate is allowed, you will be requested to send a check payable to "Treasurer of the United States" in the amount of $320 for issuance of the certificate. Certificates will be issued to owner, not licensee or agent.

Plant Variety Protection Office
Telephone: (301) 504-5518
FAX: (301) 504-5291
Homepage: http://www.ams.usda.gov/science/pvp.htm

ITEM

18a. Give:
(1) the genealogy, including public and commercial varieties, lines, or clones used, and the breeding method;
(2) the details of subsequent stages of selection and multiplication;
(3) evidence of uniformity and stability; and
(4) the type and frequency of variants during reproduction and multiplication and state how these variants may be identified

18b. Give a summary of the variety's distinctness. Clearly state how this application variety may be distinguished from all other varieties in the same crop. If the new variety is most similar to one variety or a group of related varieties:

(1) identify these varieties and state all differences objectively;
(2) attach statistical data for characters expressed numerically and demonstrate that these are clear differences; and
(3) submit, if helpful, seed and plant specimens or photographs (prints) of seed and plant comparisons which clearly indicate distinctness.

18c. Exhibit C forms are available from the PVPO Office for most crops; specify crop kind. Fill in Exhibit C (Objective Description of Variety) form as completely as possible to describe your variety.

18d. Optional additional characteristics and/or photographs. Describe any additional characteristics that cannot be accurately conveyed in Exhibit C. Use comparative varieties as is necessary to reveal more accurately the characteristics that are difficult to describe, such as plant habit, plant color, disease resistance, *etc.*

18e. Section 52(5) of the Act requires applicants to furnish a statement of the basis of the applicant's ownership. An Exhibit E form is available from the PVPO.

19. If "Yes" is specified *(seed of this variety be sold by variety name only, as a class of certified seed)*, the applicant **MAY NOT** reverse this affirmative decision after the variety has been sold and so labeled, the decision published, or the certificate issued. However, if "No" has been specified, the applicant may change the choice. *(See Regulations and Rules of Practice, Section 97.103).*

21. *See Section 83 of the Act for the Contents and Term of Plant Variety Protection.*

22. *See Sections 41, 42, and 43 of the Act and Section 97.5 of the regulations for eligibility requirements.*

23. *See Section 5.5 of the Act for instructions on claiming the benefit of an earlier filing date.*

21. CONTINUED FROM FRONT *(Please provide a statement as to the limitation and sequence of generations that may be certified.)*

22. CONTINUED FROM FRONT *(Please provide the date of first sale, disposition, transfer, or use for each country and the circumstances, if the variety (including any harvested material) or a hybrid produced from this variety has been sold, disposed of, transferred, or used in the U.S. or other countries.)*

USA - ~~March 30~~ April 10, 2000 foundation seed was offered for sale.
JHS 12 Sept. 2001

23. CONTINUED FROM FRONT *(Please give the country, date of filing or issuance, and assigned reference number, if the variety or any component of the variety is protected by intellectual property right (Plant Breeder's Right or Patent).)*

US patent; issued May 6, 1997; Appl. # 476008; Patent Ref # 5,627,061

NOTES: It is the responsibility of the applicant/owner to keep the PVPO informed of any changes of address or change of ownership or assignment or owner's representative during the life of the application/certificate. There is no charge for filing a change of address. The fee for filing a change of ownership or assignment or any modification of owner's name is specified in Section 97.175 of the regulations. *(See Section 101 of the Act, and Sections 97.130, 97.131, 97.175(h) of the Regulations and Rules of Practice.)*

To avoid conflict with other variety names in use, the applicant must check the variety names proposed by contacting: Seed Branch, AMS, USDA, Room 213, Building 306, Beltsville Agricultural Research Center–East, Beltsville, MD 20705. Telephone: (301) 504-8089.

S&T-470 (2-99) designed by the Plant Variety Protection Office with WordPerfect 6.0a. Replaces STD-470 (6-98) which is obsolete.

Exhibit A

Origin and Breeding History of SD1091RR Soybean

In 1996 Monsanto Company licensed to SDSU, rights to use Monsanto's Roundup Ready gene to develop soybean cultivars tolerant to Roundup herbicide. Seeds supplied to SDSU under this licensing agreement consisted of 50 BC1F2 seeds derived by Monsanto from crossing soybean variety 'Resnick' with soybean genotype "40-3-2", which Monsanto had transformed with a gene which imparts Roundup herbicide tolerance. Monsanto subsequently backcrossed the gene from their transformed line 40-3-2 into soybean cultivars of various maturity groups for distribution at different geographic latitudes in the US. The Resnick backcross was the variety most adapted to the northern latitudes where SD is located. The pedigree of the material used to develop SD1091RR was as follows: [Resnick (2) x 40-3-2].

During summer 1996 the BC1F2 seeds provided by Monsanto were grown to produce BC1F3 plants, which were sprayed with Roundup. Sixteen plants that did not contain the Roundup Ready gene were killed. Remaining resistant plants were used as the male parents in crosses with the cultivar "Surge", which is a SD cultivar not tolerant to Roundup. Three backcrosses were made to Surge in the growth chamber during winter 1996. Plants grown after each backcross were sprayed with Roundup to identify the resistant plants to be used in the next backcross. The pedigree of SD1091RR, therefore, is as follows: [Surge (4) x (Resnick (2) x 40-3-2)]. During summer 1997, BC3F2 seeds were produced in the field. During winter 1997 BC3F3 plants were grown in the greenhouse, and single plants were harvested. Ninety BC3F3 plant rows were grown in greenhouse soil beds and sprayed with Roundup to identify heterozygous rows. Of the 90 rows, 16 were segregating for undesirable traits, and were discarded.

Of the 74 remaining rows, 50 were gray and 24 were tawny pubescence. Tawny rows were discarded. Of the 50 gray-pubescence rows, 37 were homozygous for tolerance to Roundup, and BC3F4 seeds were harvested from these. In 1998, these 37 rows (BC3F4 plants) were evaluated in an augmented randomized complete block design. The recurrent parent, Surge, was replicated three times in the block to provide statistical comparisons. Data were recorded for: lodging, plant height, pubescence color, pod color, and maturity. At the same time in the greenhouse, from remnant seed, each row was evaluated for phytophthora root rot.

Twenty six rows that closely matched the yield and phenotyic characteristics of the recurrent parent, Surge, and contained the Rps1-a gene for phytophthora resistance were composited to form SD1091RR. This BC3F5 seed was used to grow a one-acre breeders seed increase in Chile South America in winter 1998. The BC3F6 seed was used for yield and agronomic evaluations at six locations, and tolerance evaluations at three locations in 1999. Foundation seed (BC3F7) was produced by the SD Foundation Seed Stocks Division concurrently with yield and agronomic evaluations in 1999. Additional yield and agronomic evaluations were conducted at eight locations, and tolerance evaluations at three locations across SD in 2000 using BC3F7 seed. In March 2000, Foundation seed was distributed to Certified Seed Growers for increase, and SD1091RR (BC3F8) was approved for release by the SD variety release committee. In March 2001 seed of SD1091RR was released to growers in South Dakota. The variety may contain up to 0.9% buff hilum color variants.

Exhibit B

Novelty Statement for SD1091RR Soybean

"SD1091RR" soybean is most similar to 'Surge' soybean. The key distinguishing trait is that Surge does not contain genes for resistance to Roundup herbicide, while SD1091RR does. As a result, all plants of Surge sprayed with Roundup herbicide at the V3 stage will die, while all plants of SD1091RR will survive the same dosage (Tables 1 and 2). SD1091RR and Surge are similar in plant height, and SD1091 matures 2-3 days later than Surge. Seeds of SD1091RR are 2 g per 100 smaller than Surge. Seed protein of SD1091RR is about 1% lower than Surge.

Table 1. Agronomic traits of soybean varieties across six SD environments in 1999

NAME	TRAITS IN SIX 1999 LOCATIONS							
	MATURITY (days from planting)	SEED YIELD bu/a	PLANT HEIGHT (cm)	LODGING SCORE (1-5)	SEED WEIGHT (g/100)	COMPOSITION Protein (%)	COMPOSITION Oil (%)	ROUNDUP[a] TOLERANCE (% Survival)
Surge	119.0	42.5	86.4	1.5	18.2	44.0	20.0	0.0
SD1091RR	121.0	43.0	83.8	1.0	16.0	43.0	20.0	100.0
CV (%)	3.8	7.6	5	3.5	2.5			
LSD (0.05)	1.8	3.2	7.9	2.2	1.8			

[a]Plants were sprayed with 64 ounces per acre of Roundup herbicide at V3 growth stage. These evaluations were conducted in separate tests from the yield trials at 3 locations.

Table 2. Agronomic traits of soybean varieties across eight SD environments in 2000.

NAME	TRAITS IN EIGHT 2000 LOCATIONS							
	MATURITY (days from planting)	SEED YIELD bu/a	PLANT HEIGHT (cm)	LODGING SCORE (1-5)	SEED WEIGHT (g/100)	COMPOSITION Protein (%)	COMPOSITION Oil (%)	ROUNDUP[a] TOLERANCE (% Survival)
Surge	113	44.8	81.3	2.0	18.5	43.9	21	0.0
SD1091RR	116	45.4	86.4	2.0	16	42.2	19.5	100.0
CV (%)	4.1	9.9	5.5	3.7	2.2			
LSD (0.05)	2.1	2.1	6.6	3	1.4			

[a]Plants were sprayed with 64 ounces per acre of Roundup herbicide at V3 growth stage. These evaluations were conducted in separate tests from the yield trials at 3 locations.

Figure 1. Polyacrylamide gels containing PCR amplifications comparing Surge (upper half) and SD1091RR (lower half). Each "vertical lane" was prepared from a single seed out of a random sample from each cultivar.

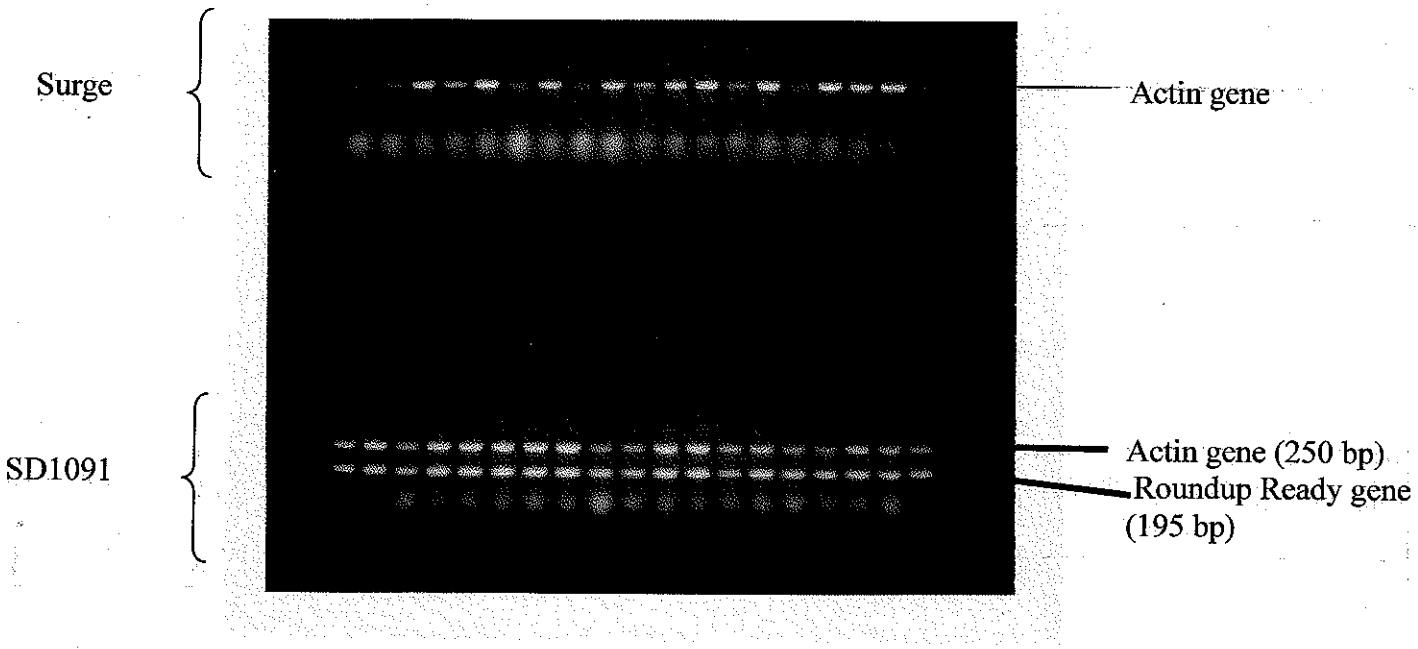

Exhibit B

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"SD1091RR" soybean is most similar to 'Surge' soybean. The key distinguishing trait is that Surge does not contain genes for resistance to Roundup herbicide, while SD1091RR does. As a result, all plants of Surge sprayed with Roundup herbicide at the V3 stage will die, while all plants of SD1091RR will survive the same dosage (Tables 1 and 2). SD1091RR and Surge are similar in plant height, and SD1091 matures 2-3 days later than Surge. Seeds of SD1091RR are 2 g per 100 smaller than Surge. Seed protein of SD1091RR is about 1% lower than Surge.

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PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
South Dakota Agricultural Experiment Sta	SD92-1233G	SD1091RR

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*
South Dakota State University
Agricultural Hall 129
Brookings SD 57007

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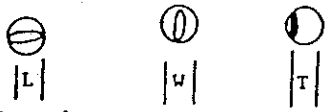
Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[4]



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ **2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ **4. SEED SIZE: (Mature Seed)**

[1][6] Grams per 100 seeds

★ **5. HILUM COLOR: (Mature Seed)**

[5] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ **6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

★ **7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[1] 1 = Low 2 = High

★ **8. SEED PROTEIN ELECTROPHORETIC BAND:**

[ ] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ **9. HYPOCOTYL COLOR:**

[4] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ **10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

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11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[2] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[1] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[3] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ **17. PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[0][3] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

★ **19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)**

BACTERIAL DISEASES:

★ [0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

★ [0] Bacterial Blight *(Pseudomonas glycinea)*

★ [0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

★ [0] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

★ [0] Race 1 [ ] Race 2 [ ] Race 3 [ ] Race 4 [ ] Race 5 [ ] Other *(Specify)* _____

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

★ [0] Brown Stem Rot *(Cephalosporium gregatum)*

[0] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [0] Pod and Stem Blight *(Diaporthe phaseolorum var; sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[0] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma var. sojae)*

★ [2] Race 1 [0] Race 2 [1] Race 3 [1] Race 4 [0] Race 5 [0] Race 6 [1] Race 7

[0] Race 8 [0] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[0] Bud Blight (Tobacco Ringspot Virus)

[0] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [0] Cowpea Mosaic (Cowpea Chlorotic Virus)

[0] Pod Mottle (Bean Pod Mottle Virus)

★ [0] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [0] Race 1 [0] Race 2 [1] Race 3 [0] Race 4 [ ] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[ ] OTHER DISEASE NOT ON FORM *(Specify)*: _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [2] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Surge	Seed Coat Luster	Surge
Leaf Shape	Surge	Seed Size	Surge
Leaf Color	Surge	Seed Shape	Surge
Leaf Size	Surge	Seedling Pigmentation	Surge

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
SD1091RR Submitted	121	1.0	83.8	8.3	12.0	43	20	16.0	3
Surge Name of Similar Variety	119	1.5	86.4	6.3	9.0	44	20	18.2	3

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.

2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.

3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.

4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
SOUTH DAKOTA STATE UNIVERSITY EXPERIMENT STATION	SD92-1233G	SD1091RR

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	5. TELEPHONE *(include area code)*	6. FAX *(include area code)*
SOUTH DAKOTA STATE UNIVERSITY AGRICULTURAL HALL 129 BROOKINGS, SD 57007	(605) 688-4149	605 688 6065

7. PVPO NUMBER 200100177

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. ☐ YES ☒ NO

The variety contains Monsanto's Roundup Ready gene, which South Dakota Agricultural Experiment Station has permission to use via a commercialization agreement with Monsanto.

9. Is the applicant (individual or company) a U.S. national or U.S. based company? ☒ YES ☐ NO
If no, give name of country

10. Is the applicant the original owner? ☒ YES ☐ NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

☐ YES ☐ NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

☐ YES ☐ NO If no, give name of country

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

STD-470-E (07-97) *(Destroy previous editions).*
Electronic version designed using WordPerfect InForms by USDA-AMS-IMB.